

2025 October 15 to Oct. 17 UT

Lat.	Twilight		Sunrise	Sunset	Twilight	
	Naut.	Civil			Civil	Naut.
N 72°	05:01	06:19	07:30	15:59	17:10	18:28
N 70°	05:04	06:14	07:18	16:11	17:15	18:25
68°	05:06	06:11	07:08	16:21	17:19	18:23
66°	05:08	06:07	07:00	16:29	17:22	18:21
64°	05:10	06:05	06:53	16:36	17:25	18:20
62°	05:11	06:02	06:47	16:42	17:28	18:19
60°	05:12	06:00	06:42	16:48	17:30	18:18
N 58°	05:12	05:58	06:38	16:52	17:32	18:17
56°	05:13	05:56	06:34	16:56	17:34	18:17
54°	05:13	05:54	06:30	17:00	17:36	18:17
52°	05:13	05:53	06:27	17:03	17:38	18:17
50°	05:14	05:51	06:24	17:06	17:39	18:16
45°	05:13	05:48	06:17	17:13	17:43	18:17
N 40°	05:13	05:44	06:12	17:19	17:46	18:17
35°	05:12	05:41	06:07	17:24	17:49	18:19
30°	05:11	05:38	06:03	17:28	17:52	18:20
20°	05:07	05:33	05:55	17:36	17:58	18:23
N 10°	05:03	05:27	05:49	17:42	18:04	18:28
0°	04:57	05:21	05:42	17:49	18:10	18:34
S 10°	04:50	05:14	05:36	17:55	18:17	18:42
20°	04:40	05:06	05:29	18:03	18:25	18:51
30°	04:28	04:56	05:21	18:11	18:35	19:04
35°	04:19	04:50	05:16	18:16	18:42	19:12

S 45°	03:57	04:34	05:04	18:27	18:58	19:35
S 50°	03:42	04:23	04:57	18:35	19:09	19:51
52°	03:34	04:18	04:53	18:39	19:15	19:59
54°	03:25	04:12	04:49	18:43	19:20	20:08
56°	03:15	04:05	04:45	18:47	19:27	20:18
58°	03:04	03:58	04:40	18:52	19:35	20:30
S 60°	02:50	03:50	04:35	18:58	19:43	20:44
Lat.	Moonrise			Moonset		
	Wed	Thu	Fri	Wed	Thu	Fri
N 72°	20:40	·· ·	00:05	19:17	17:29	16:44
N 70°	21:56	·· ·	00:25	18:00	17:06	16:33
68°	22:33	·· ·	00:41	17:21	16:48	16:25
66°	22:59	·· ·	00:54	16:54	16:33	16:17
64°	23:18	·· ·	01:05	16:33	16:21	16:11
62°	23:34	·· ·	01:14	16:16	16:11	16:06
60°	23:48	·· ·	01:22	16:02	16:02	16:01
N 58°	23:59	·· ·	01:28	15:49	15:54	15:57
56°	·· ·	00:09	01:34	15:39	15:47	15:53
54°	·· ·	00:18	01:40	15:29	15:41	15:50
52°	·· ·	00:25	01:44	15:21	15:35	15:47
50°	·· ·	00:32	01:49	15:13	15:30	15:44
45°	·· ·	00:47	01:58	14:57	15:19	15:38
N 40°	·· ·	00:59	02:05	14:43	15:10	15:32
35°	00:04	01:09	02:12	14:32	15:02	15:28
30°	00:16	01:18	02:18	14:22	14:55	15:24

N 10°	00:54	01:47	02:36	13:49	14:32	15:11
0°	01:10	01:59	02:44	13:34	14:21	15:05
S 10°	01:27	02:12	02:53	13:20	14:11	14:59
20°	01:44	02:25	03:01	13:04	14:00	14:53
30°	02:05	02:40	03:11	12:46	13:47	14:45
35°	02:16	02:49	03:16	12:35	13:40	14:41
40°	02:30	02:58	03:23	12:23	13:31	14:36
45°	02:45	03:10	03:30	12:09	13:21	14:31
S 50°	03:05	03:24	03:39	11:51	13:09	14:24
52°	03:14	03:30	03:43	11:42	13:04	14:21
54°	03:24	03:37	03:47	11:33	12:57	14:17
56°	03:35	03:45	03:52	11:22	12:50	14:14
58°	03:48	03:54	03:57	11:10	12:42	14:09
S 60°	04:04	04:04	04:03	10:55	12:33	14:04

Day	Sun			Moon		Age 24-26 37-18%
	Eqn.of Time 00h:ss	12h mm:ss	Mer. Pass hh:mm	Mer.Pass. Upper hh:mm	Lower hh:mm	
15	14:10	14:17	11:46	07:23	19:47	
16	14:23	14:30	11:46	08:11	20:33	
17	14:36	14:42	11:45	08:55	21:16	

Aries			Venus			Mars			Jupiter			Saturn		
Sat	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	26°44.3	201°26.6	S00°37.5	161°41.3	S17°19.3	270°39.6	N21°19.9	28°54.0	S03°39.3					
1	41°46.7	216°26.2	38.7	176°42.0	19.9	285°41.8	19.9	43°56.6	39.4					
2	56°49.2	231°25.8	40.0	191°42.8	20.4	300°44.1	19.8	58°59.2	39.5					
3	71°51.7	246°25.5	.. 41.2	206°43.5	.. 20.9	315°46.3	.. 19.8	74°01.8	.. 39.5					
4	86°54.1	261°25.1	42.4	221°44.2	21.4	330°48.6	19.8	89°04.4	39.6					
5	101°56.6	276°24.7	43.6	236°44.9	21.9	345°50.9	19.7	104°07.0	39.6					
6	116°59.1	291°24.3	S00°44.8	251°45.6	S17°22.4	0°53.1	N21°19.7	119°09.6	S03°39.7					
7	132°01.5	306°23.9	46.1	266°46.3	22.9	15°55.4	19.7	134°12.2	39.7					
8	147°04.0	321°23.5	47.3	281°47.0	23.5	30°57.6	19.7	149°14.9	39.8					
9	162°06.5	336°23.1	.. 48.5	296°47.8	.. 24.0	45°59.9	.. 19.6	164°17.5	.. 39.9					
10	177°08.9	351°22.7	49.7	311°48.5	24.5	61°02.2	19.6	179°20.1	39.9					
11	192°11.4	6°22.3	51.0	326°49.2	25.0	76°04.4	19.6	194°22.7	40.0					
12	207°13.9	21°21.9	S00°52.2	341°49.9	S17°25.5	91°06.7	N21°19.5	209°25.3	S03°40.0					
13	222°16.3	36°21.5	53.4	356°50.6	26.0	106°09.0	19.5	224°27.9	40.1					
14	237°18.8	51°21.1	54.6	11°51.3	26.5	121°11.2	19.5	239°30.5	40.2					
15	252°21.2	66°20.7	.. 55.8	26°52.0	.. 27.0	136°13.5	.. 19.5	254°33.1	.. 40.2					
16	267°23.7	81°20.3	57.1	41°52.7	27.6	151°15.7	19.4	269°35.7	40.3					
17	282°26.2	96°19.9	58.3	56°53.5	28.1	166°18.0	19.4	284°38.3	40.3					
18	297°28.6	111°19.5	S00°59.5	71°54.2	S17°28.6	181°20.3	N21°19.4	299°40.9	S03°40.4					
19	312°31.1	126°19.1	01°00.7	86°54.9	29.1	196°22.5	19.4	314°43.6	40.4					
20	327°33.6	141°18.8	02.0	101°55.6	29.6	211°24.8	19.3	329°46.2	40.5					
21	342°36.0	156°18.4	.. 03.2	116°56.3	.. 30.1	226°27.1	.. 19.3	344°48.8	.. 40.6					
22	357°38.5	171°18.0	04.4	131°57.0	30.6	241°29.3	19.3	359°51.4	40.6					
23	12°41.0	186°17.6	05.6	146°57.7	31.1	256°31.6	19.2	14°54.0	40.7					
Mer.pass. 22:09			ν -0.4° d 1.2' m -3.92			ν 0.7° d 0.5' m 1.52			ν 2.3° d -0.0' m -2.23			ν 2.6° d 0.1' m 0.69		

Sun	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	27°43.4	201°17.2	S01°06.8	161°58.4	S17°31.6	271°33.9	N21°19.2	29°56.6
1	42°45.9	216°16.8	08.1	176°59.1	32.1	286°36.1	19.2	44°59.2
2	57°48.3	231°16.4	09.3	191°59.8	32.7	301°38.4	19.2	60°01.8
3	72°50.8	246°16.0	.. 10.5	207°00.5	.. 33.2	316°40.7	.. 19.1	75°04.4
4	87°53.3	261°15.6	11.7	222°01.3	33.7	331°42.9	19.1	90°07.0
5	102°55.7	276°15.2	13.0	237°02.0	34.2	346°45.2	19.1	105°09.6
6	117°58.2	291°14.8	S01°14.2	252°02.7	S17°34.7	1°47.5	N21°19.0	120°12.3
7	133°00.7	306°14.8	15.4	267°03.4	35.2	16°49.7	19.0	135°14.9
8	148°03.1	321°14.0	16.6	282°04.1	35.7	31°52.0	19.0	150°17.5
9	163°05.6	336°13.6	.. 17.8	297°04.8	.. 36.2	46°54.3	.. 19.0	165°20.1
10	178°08.1	351°13.2	19.1	312°05.5	36.7	61°56.5	18.9	180°22.7
11	193°10.5	6°12.8	20.3	327°06.2	37.2	76°58.8	18.9	195°25.3
12	208°13.0	21°12.4	S01°21.5	342°06.9	S17°37.7	92°01.1	N21°18.9	210°27.9
13	223°15.5	36°12.0	22.7	357°07.6	38.2	107°03.3	18.9	225°30.5
14	238°17.9	51°11.6	24.0	12°08.3	38.8	122°05.6	18.8	240°33.1
15	253°20.4	66°11.2	.. 25.2	27°09.0	.. 39.3	137°07.9	.. 18.8	255°35.7
16	268°22.8	81°10.8	26.4	42°09.7	39.8	152°10.2	18.8	270°38.3
17	283°25.3	96°10.4	27.6	57°10.4	40.3	167°12.4	18.8	285°40.9
18	298°27.8	111°10.1	S01°28.9	72°11.1	S17°40.8	182°14.7	N21°18.7	300°43.5
19	313°30.2	126°09.7	30.1	87°11.8	41.3	197°17.0	18.7	315°46.1
20	328°32.7	141°09.3	31.3	102°12.6	41.8	212°19.2	18.7	330°48.8
21	343°35.2	156°08.9	.. 32.5	117°13.3	.. 42.3	227°21.5	.. 18.6	345°51.4
22	358°37.6	171°08.5	33.7	132°14.0	42.8	242°23.8	18.6	0°54.0
23	13°40.1	186°08.1	35.0	147°14.7	43.3	257°26.1	18.6	15°56.6
Mer.pass. 22:05			ν -0.4° d 1.2' m -3.92			ν 0.7° d 0.5' m 1.51		

Mon	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	28°42.6	201°07.7	S01°36.2	162°15.4	S17°43.8	272°28.3	N21°18.6	30°59.2
1	43°45.0	216°07.3	37.4	177°16.1	44.3	287°30.6	18.5	46°01.8
2	58°47.5	231°06.9	38.9	192°16.8	44.8	302°32.9	18.5	61°04.4
3	73°50.0	246°06.5	.. 39.6	207°17.5	.. 45.3	317°35.2	.. 18.5	76°07.0
4	88°52.7	261°06.1	41.1	222°18.2	45.8	332°37.4	18.5	91°09.6
5	103°54.9	276°05.7	42.3	237°18.9	46.3	347°39.7	18.4	106°12.2
6	118°57.3	291°05.3	S01°43.5	252°19.6	S17°46.8	2°42.0	N21°18.4	121°14.8
7	133°59.8	306°04.9	44.7	267°20.3	47.3	17°44.3	18.4	136°17.4
8	148°02.3	321°04.5	46.0	282°21.0	47.8	32°46.5	18.4	151°20.0
9	163°04.7	336°04.1	.. 47.2	297°21.7	.. 48.3	47°48.8	.. 18.3	166°22.6
10	178°07.2	351°03.7	48.4	312°22.4	48.8	62°51.1	18.3	181°25.2
11	194°09.7	6°03.3	49.6	327°23.1	49.3	77°53.4	18.3	196°27.8
12	209°12.1	21°02.9	S01°50.9	342°23.8	S17°49.8	92°55.6	N21°18.3	211°30.4
13	224°14.6	36°02.2	52.1	357°24.5	50.3	107°57.9	18.2	226°33.0
14	239°17.1	51°02.1	53.3	12°25.2	50.8	123°00.2	18.2	241°35.6
15	254°19.5	66°01.7	.. 54.5	27°25.9	.. 51.3	138°02.5	.. 18.2	256°38.3
16	269°22.0	81°01.3	55.8	42°26.6	51.8	153°04.8	18.2	271°40.9
17	284°24.4	96°00.9	57.0	57°27.3	52.3	168°07.0	18.1	286°43.5
18	299°26.9	111°00.5	S01°58.2	72°28.0	S17°52.8	183°09.3	N21°18.1	301°46.1
19	314°29.4	126°00.1	01°59.4	87°28.7	53.3	198°11.6	18.1	316°48.7
20	329°31.8	141°09.7	02°00.6	102°29.4	53.8	213°13.9	18.1	331°51.3
21	344°34.3	156°09.3	.. 01.9	117°30.1	.. 54.3	228°16.1	.. 18.0	346°53.9
22	359°36.8	171°08.9	03.1	132°30.8	54.8	243°18.4	18.0	1°56.5
23	14°39.2	186°08.5	04.3	147°31.5	55.3	258°20.7	18.0	16°59.1
Mer.pass. 22:02			ν -0.4° d 1.2' m -3.92			ν 0.7° d 0.5' m 1.51		

Stars		
	SHA	Dec
Alpheratz	357°33.8	29°14.2
Ankaa	353°06.1	-02°09.9
Schedar	349°29.8	56°40.9
Diphda	348°46.3	-17°50.6
Achernar	235°19.1	-07°06.3
Hamal	327°50.1	23°35.2
Polaris	313°15.9	89°22.3
Acamar	315°10.9	-40°11.9
Menkar	314°05.2	-41°11.6
Mirfak	308°26.9	49°57.2
Aldebaran	290°38.7	16°33.8
Rigel	281°03.1	-8°10.1
Capella	280°20.7	46°01.3
Bellatrix	278°22.0	6°22.5
Elath	275°36.9	-1°11.0
Anilam	270°51.3	7°24.8
Betelgeuse	263°51.9	-52°42.2
Canopus	258°25.6	-16°44.8
Sirius	255°05.3	-29°00.1
Adhara	244°50.2	5°09.6
Procyon	243°16.5	27°57.8
Pollux	234°14.6	-59°35.1
Avior	222°46.0	-43°31.9
Shaula	217°38.5	-69°49.9
Miaplacidus	217°46.1	-8°46.1
Alphard	207°34.0	11°50.5
Regulus	193°40.7	61°36.6
Dubhe	182°24.6	14°25.7
Denebola	175°43.3	-17°41.0
Gienah	173°00.1	-63°14.4
Acrux	171°51.5	-57°15.3
Gacrux	166°12.9	55°49.2
Alioth	158°22.0	-11°17.7
Spica	152°52.0	49°11.1
Alkaid	148°35.8	-60°29.8
Hadar	147°57.3	-36°29.7
Menkent	135°40.7	19°03.0
Rigel Kent	139°40.1	-60°56.5
Kochab	137°20.9	74°03.0
Zuben El	136°55.7	-16°08.9
Alphecca	126°03.5	26°37.8
Antares	112°15.3	-26°29.4
Atria	107°09.4	-69°04.6
Sabik	102°02.3	-15°45.4
Shaula	96°09.7	-37°07.4
Rasalhague	95°58.2	12°32.6
Eltanin	90°42.1	51°29.3
Kaus Aust.	83°31.8	-34°22.4
Vega	80°32.9	38°48.7
Nunki	75°47.1	-26°15.9
Altair	61°59.4	8°56.3
Peacock	53°04.6	-56°39.3
Deneb	49°25.3	45°22.6
Enif	33°38.0	9°59.8
Al Na'ir	27°31.8	-46°50.3
Fomalhaut	15°13.5	-29°29.1
Scheat	13°44.3	28°13.6
Markab	13°29.0	15°20.8
Oct 18 Sat SHA Mer.pass		
Venus	174°42.2	10.35
Mars	134°57.0	13.13
Jupiter	243°55.3	08.56
Saturn	2°09.7	22.01
Oct 19 Sun SHA Mer.pass		
Venus	173°33.8	10.35
Mars	134°15.0	13.11
Jupiter	243°50.4	05.53
Saturn	2°13.2	21.56
Oct 20 Mon SHA Mer.pass		
Venus	172°25.1	10.36
Mars	133°32.8	13.10
Jupiter	243°45.8	05.49
Saturn	2°16.6	21.52
Horizontal parallax		
Venus:	0.1	
Mars:	0.1	

Sun			Moon				
Sat	GHA	Dec	GHA	ν	Dec	d	HP
0	183°41.9	S09°37.8	219°53.0	15.8°	N05°51.8	-14.6'	55.4'
1	198°42.1		234°27.9	15.9°	05°37.2	-14.6'	55.4'
2	213°42.3	38.6	249°02.7	15.9°	05°22.6	-14.6'	55.4'
3	228°42.3	.. 40.5	263°37.6	15.9°	05°07.9	-14.7'	55.3'
4	243°42.4		278°12.6	16.0°	04°53.3	-14.7'	55.3'
5	258°42.6	42.3	292°47.6	16.0°	04°38.6	-14.7'	55.3'
6	273°42.7	S09°43.2	307°22.6	16.1°	N04°23.9	-14.7'	55.3'
7	288°42.8	44.1	321°57.6	16.1°	04°09.3	-14.7'	55.3'
8	303°42.9		336°32.7	16.1°	03°54.6	-14.7'	55.3'
9	318°43.0	.. 45.9	351°07.9	16.2°	03°39.9	-14.7'	55.2'
10	333°43.1	46.8	5°43.0	16.2°	03°25.2	-14.7'	55.2'
11	348°43.3	47.7	20°18.2	16.2°	03°10.5	-14.7'	55.2'
12	3°43.4	S09°48.7	34°53.4	16.2°	N02°55.8	-14.7'	55.2'
13	18°43.5	49.6	49°28.6	16.3°	02°41.1	-14.7'	55.2'
14	33°43.6	50.5	64°03.9	16.3°	02°26.4	-14.7'	55.1'
15	48°43.7	.. 51.4	78°39.2	16.3°	02°11.7	-14.7'	55.1'
16	63°43.9	52.3	93°14.5	16.3°	01°57.0	-14.7'	55.1'
17	78°44.0	53.2	107°49.8	16.4°	01°42.2	-14.7'	55.1'
18	93°44.1	S05°54.1	122°25.2	16.4°	N01°27.5	-14.7'	55.1'
19	108°44.2	55.0	137°00.6	16.4°	01°12.8	-14.7'	55.1'
20	123°44.3	.. 55.9	151°36.0	16.4°	00°58.2	-14.7'	55.0'
21	138°44.4	.. 56.8	166°43.4	16.5°	00°43.5	-14.7'	55.0'
22	153°44.5	57.7	180°46.8	16.5°	00°28.8	-14.7'	55.0'
23	168°44.7	58.6	195°22.3	16.5°	00°14.1	-14.7'	55.0'
SD = 16.0' $d = 0.9'$			SD = 15.1'				
Sun	GHA	Dec	GHA	ν	Dec	d	HP
0	183°44.8	S09°59.5	209°57.8	16.5°	S00°00.6	14.7'	55.0'
1	198°44.9	10°00.4	224°33.2	16.5°	00°15.2	14.7'	54.9'
2	213°45.0	01.3	239°08.7	16.5°	00°29.9	14.6'	54.9'
3	228°45.1	.. 02.2	253°44.3	16.5°	00°44.5	14.6'	54.9'
4	243°45.2	03.1	268°19.8	16.5°	00°59.2	14.6'	54.9'
5	258°45.3	04.0	282°55.3	16.5°	01°13.8	14.6'	54.9'
6	273°45.5	S10°04.9	297°30.8	16.5°	S01°28.4	14.6'	54.9'
7	288°45.6	05.8	312°06.4	16.6°	01°43.0	14.6'	54.8'
8	303°45.7	06.7	326°42.0	16.6°	01°57.6	14.6'	54.8'
9	318°45.8	.. 07.6	341°17.5	16.6°	02°12.1	14.6'	54.8'
10	333°45.9	08.5	355°53.1	16.6°	02°26.7	14.5'	54.8'
11	348°46.0	09.4	10°28.7	16.6°	02°41.2	14.5'	54.8'
12	3°46.1	S10°10.3	25°04.2	16.6°	S02°55.7	14.5'	54.8'
13	18°46.2	11.2	39°39.8	16.6°	03°10.2	14.5'	54.8'
14	33°46.4	12.1	54°15.4	16.6°	03°24.7	14.5'	54.7'
15	48°46.5	.. 13.0	68°50.9	16.6°	03°39.2	14.4'	54.7'
16	63°46.6	13.9	83°26.5	16.6°	03°53.6	14.4'	54.7'
17	78°46.7	14.8	98°02.1	16.6°	04°08.0	14.4'	54.7'
18	93°46.8	S10°15.7	112°37.7	16.6°	S04°22.4	14.4'	54.7'
19	108°46.9	16.6	127°13.2	16.6°	04°36.8	14.3'	54.7'
20	123°47.0	.. 17.4	141°49.3	16.6°	04°51.2	14.3'	54.7'
21	138°47.1	.. 18.4	156°24.3	16.5°	05°05.5	14.3'	54.6'
22	153°47.2	19.3	170°59.9	16.5°	05°19.8	14.3'	54.6'
23	168°47.3	20.2	185°35.4	16.5°	05°34.0	14.2'	54.6'
SD = 16.0' $d = 0.9'$			SD = 15.0'				
Mon	GHA	Dec	GHA	ν	Dec	d	HP
0	183°47.5	S10°21.1	200°10.9	16.5°	S05°48.3	14.2'	54.6'
1	198°47.6	22.0	214°46.5	16.5°	06°02.5	14.2'	54.6'
2	213°47.7	22.9	229°22.0	16.5°	06°16.7	14.2'	54.6'
3	228°47.8	.. 23.8	243°57.5	16.5°	06°30.9	14.1'	54.6'
4	243°47.9	24.7	258°32.9	16.5°	06°45.0	14.1'	54.5'
5	258°48.0	25.6	273°08.4	16.4°	06°59.1	14.1'	54.5'
6	273°48.1	S10°26.5	287°43.8	16.4°	S07°13.1	14.0'	54.5'
7	288°48.2	27.4	302°19.3	16.4°	07°27.2	14.0'	54.5'
8	303°48.3	28.3	316°54.7	16.4°	07°41.2	14.0'	54.5'
9	318°48.4	.. 29.2	331°30.1	16.4°	07°55.1	13.9'	54.5'
10	333°48.5	30.0	346°05.5	16.4°	08°09.1	13.9'	54.5'
11	348°48.6	30.9	0°40.8	16.3°	08°22.9	13.9'	54.4'
12	3°48.7	S10°31.8	15°16.2	16.3°	S08°36.8	13.8'	54.4'
13	18°48.8	32.7	29°51.5	16.3°	08°50.6	13.8'	54.4'
14	33°48.9	33.6	44°26.8	16.3°	09°04.4	13.7'	54.4'
15	48°49.0	.. 34.5	59°02.1	16.2°	09°18.1	13.7'	54.4'
16	63°49.1	35.4	73°37.3	16.2°	09°31.8	13.7'	54.4'
17	78°49.2	36.3	88°12.5	16.2°	09°45.5	13.6'	54.4'
18	93°49.3	S10°37.2	102°47.7	16.2°	S09°59.1	13.6'	54.4'
19	108°49.5	38.1	117°22.9	16.1°	10°12.7	13.5'	54.4'
20	123°49.6	39.0	131°58.0	16.1°	10°26.2	13.5'	54.3'
21	138°49.7	.. 39.9	146°33.1	16.1°	10°39.7	13.4'	54.3'
22	153°49.8	40.8	161°08.2	16.0°	10°53.1	13.4'	54.3'
23	168°49.9	41.6	175°43.3	16.0°	11°06.5	13.3'	54.3'
SD = 16.1' $d = 0.9'$			SD = 14.9'				

Aries			Venus			Mars			Jupiter			Saturn		
Tue	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	29°41.7	200°58.1	S02°05.5	162°32.2	S17°55.8	273°23.0	32°01.7	N21°18.0	32°01.7	N21°18.0	32°01.7	N21°18.0	32°01.7	N21°18.0
1	44°44.2	215°57.7	06.8	177°32.8	56.3	288°25.3	17.9	47°04.3	43.5	47°04.3	43.5	47°04.3	43.5	47°04.3
2	59°46.6	230°57.3	08.0	192°33.5	56.8	303°27.6	17.9	62°06.9	43.6	62°06.9	43.6	62°06.9	43.6	62°06.9
3	74°49.1	245°56.9	09.2	207°34.2	57.3	318°29.8	17.9	77°09.5	43.6	77°09.5	43.6	77°09.5	43.6	77°09.5
4	89°51.6	260°56.5	10.4	222°34.9	57.8	333°32.1	17.9	92°12.1	43.7	92°12.1	43.7	92°12.1	43.7	92°12.1
5	104°54.0	275°56.1	11.6	237°35.6	58.3	348°34.4	17.8	107°14.7	43.7	107°14.7	43.7	107°14.7	43.7	107°14.7
6	119°56.5	290°55.7	S02°12.9	252°36.3	S17°55.8	3°36.7	N21°17.8	122°17.3	S03°43.8	122°17.3	S03°43.8	122°17.3	S03°43.8	122°17.3
7	134°58.9	305°55.3	14.1	267°37.0	59.3	18°39.0	17.8	137°19.9	43.8	137°19.9	43.8	137°19.9	43.8	137°19.9
8	150°01.4	320°54.9	15.3	282°37.7	17°58.9	33°41.3	17.8	152°22.5	43.9	152°22.5	43.9	152°22.5	43.9	152°22.5
9	165°03.9	335°54.5	16.5	297°38.4	18°00.3	48°43.5	17.7	167°25.1	43.9	167°25.1	43.9	167°25.1	43.9	167°25.1
10	180°06.3	350°54.1	17.8	312°39.1	00.8	63°45.8	17.7	182°27.7	44.0	182°27.7	44.0	182°27.7	44.0	182°27.7
11	195°08.8	5°53.7	19.0	327°39.8	01.8	78°48.1	17.7	197°30.3	44.0	197°30.3	44.0	197°30.3	44.0	197°30.3
12	210°11.3	20°53.3	S02°20.2	342°40.5	S18°01.3	93°50.4	N21°17.7	212°32.9	S03°44.1	212°32.9	S03°44.1	212°32.9	S03°44.1	212°32.9
13	225°13.7	35°52.9	21.4	357°41.2	02.3	108°52.7	17.6	227°35.5	44.2	227°35.5	44.2	227°35.5	44.2	227°35.5
14	240°16.2	50°52.5	22.6	12°41.9	02.8	123°55.0	17.6	242°38.1	44.2	242°38.1	44.2	242°38.1	44.2	242°38.1
15	255°18.7	65°52.1	23.9	27°42.6	03.3	138°57.2	17.6	257°40.7	44.3	257°40.7	44.3	257°40.7	44.3	257°40.7
16	270°21.1	80°51.7	25.1	42°43.3	03.8	153°59.5	17.6	272°43.3	44.3	272°43.3	44.3	272°43.3	44.3	272°43.3
17	285°23.6	95°51.3	26.3	57°43.9	04.3	169°01.8	17.5	287°45.9	44.4	287°45.9	44.4	287°45.9	44.4	287°45.9
18	300°26.0	110°50.9	S02°27.5	72°44.6	S18°04.1	184°04.1	N21°17.5	302°48.5	S03°44.4	302°48.5	S03°44.4	302°48.5	S03°44.4	302°48.5
19	315°28.5	125°50.5	28.8	87°45.3	05.3	199°06.4	17.5	317°51.1	44.5	317°51.1	44.5	317°51.1	44.5	317°51.1
20	330°31.0	140°50.1	30.0	102°46.0	05.8	214°08.7	17.5	332°53.7	44.5	332°53.7	44.5	332°53.7	44.5	332°53.7
21	345°33.4	155°49.7	31.2	117°46.7	06.3	229°11.0	17.4	347°56.3	44.6	347°56.3	44.6	347°56.3	44.6	347°56.3
22	0°35.9	170°49.3	32.4	132°47.4	06.8	244°13.3	17.4	2°58.9	44.6	2°58.9	44.6	2°58.9	44.6	2°58.9
23	15°38.4	185°48.9	33.6	147°48.1	07.2	259°15.5	17.4	18°01.5	44.7	18°01.5	44.7	18°01.5	44.7	18°01.5
Mer.pass. 21:58			ν -0.4' d 1.2' m -3.92			ν 0.7' d 0.5' m 1.50			ν 2.3' d -0.0' m -2.24			ν 2.6' d 0.1' m 0.71		

Wed	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	30°40.8	200°48.5	S02°34.9	162°48.8	S18°07.7	274°17.8	N21°17.4	33°04.1
1	45°43.3	215°48.1	36.1	177°49.5	08.2	289°20.1	17.3	48°06.7
2	60°45.8	230°47.7	37.3	192°50.2	08.7	304°22.4	17.3	63°09.3
3	75°48.2	245°47.3	38.5	207°50.8	09.2	319°24.7	17.3	78°11.9
4	90°50.7	260°46.9	39.7	222°51.5	09.7	334°27.0	17.3	93°14.5
5	105°53.2	275°46.5	41.0	237°52.2	10.2	349°29.3	17.2	108°17.1
6	120°55.6	290°46.1	S02°42.2	252°52.9	S18°10.7	4°31.6	N21°17.2	123°19.7
7	135°58.1	305°45.7	43.4	267°53.6	11.2	19°33.9	17.2	138°22.3
8	151°00.5	320°45.3	44.6	282°54.3	11.7	34°36.2	17.2	153°24.9
9	166°03.0	335°44.9	45.9	297°55.0	12.2	49°38.5	17.2	168°27.5
10	181°05.5	350°44.5	47.1	312°55.7	12.7	64°40.7	17.1	183°30.1
11	196°07.9	5°44.1	48.3	327°56.3	13.1	79°43.0	17.1	198°32.7
12	211°10.4	20°43.7	S02°49.5	342°57.0	S18°13.6	94°45.3	N21°17.1	213°35.3
13	226°12.9	35°43.3	50.7	357°57.7	14.1	109°47.6	17.1	228°37.9
14	241°15.3	50°42.9	52.0	12°58.4	14.6	124°49.9	17.0	243°40.5
15	256°17.8	65°42.5	53.2	27°59.1	15.1	139°52.2	17.0	258°43.1
16	271°20.3	80°42.1	54.4	42°59.8	15.6	154°54.5	17.0	273°45.7
17	286°22.7	95°41.7	55.6	58°00.5	16.1	169°56.8	17.0	288°48.3
18	301°25.2	110°41.2	S02°56.8	73°01.1	S18°16.6	184°59.1	N21°16.9	303°50.9
19	316°27.7	125°40.8	58.8	88°01.8	17.1	200°01.4	16.9	318°53.5
20	331°30.1	140°40.4	02°59.3	103°02.5	17.5	215°03.7	16.9	333°56.1
21	346°32.6	155°40.0	03°00.5	118°03.2	18.0	230°06.0	16.9	348°58.7
22	1°35.0	170°39.6	01.7	133°03.9	18.5	245°08.3	16.9	4°01.3
23	16°37.5	185°39.2	02.9	148°04.6	19.0	260°10.6	16.8	19°03.9
Mer.pass. 21:54			ν -0.4' d 1.2' m -3.92			ν 0.7' d 0.5' m 1.50		

Thu	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	31°40.0	200°38.8	S03°04.2	163°05.2	S18°19.5	275°12.9	N21°16.8	34°06.5
1	46°42.4	215°38.4	05.4	178°05.9	20.0	290°15.2	16.8	49°09.1
2	61°44.9	230°38.0	06.6	193°06.6	20.5	305°17.5	16.8	64°11.7
3	76°47.4	245°37.6	07.8	208°07.3	21.0	320°19.8	16.7	79°14.3
4	91°49.8	260°37.2	09.0	223°08.0	21.4	335°22.1	16.7	94°16.9
5	106°52.3	275°36.8	10.3	238°08.7	21.9	350°24.4	16.7	109°19.5
6	121°54.8	290°36.4	S03°11.5	253°09.3	S18°22.9	5°26.7	N21°16.7	124°22.1
7	136°57.2	305°36.0	12.7	268°10.0	22.4	20°29.0	16.7	139°24.7
8	151°59.7	320°35.6	13.9	283°10.7	23.4	35°31.3	16.6	154°27.3
9	167°02.1	335°35.2	15.1	298°11.4	23.9	50°33.6	16.6	169°29.9
10	182°04.6	350°34.8	16.4	313°12.1	24.4	65°35.9	16.6	184°32.5
11	197°07.1	5°34.4	17.6	328°12.7	24.8	80°38.2	16.6	199°35.1
12	212°09.5	20°33.9	S03°18.8	343°13.4	S18°25.3	95°40.5	N21°16.5	214°37.7
13	227°12.0	35°33.5	20.0	358°14.1	25.8	110°42.8	16.5	229°40.3
14	242°14.5	50°33.1	21.2	13°14.8	26.3	125°45.1	16.5	244°42.9
15	257°16.9	65°32.7	22.5	28°15.5	26.8	140°47.4	16.5	259°45.5
16	272°19.4	80°32.3	23.7	43°16.1	27.3	155°49.7	16.5	274°48.1
17	287°21.9	95°31.9	24.9	58°16.8	27.7	170°52.0	16.4	289°50.7
18	302°24.3	110°31.5	S03°26.1	73°17.5	S18°28.2	185°54.3	N21°16.4	304°53.3
19	317°26.8	125°31.1	27.3	88°18.2	28.2	200°56.6	16.4	319°55.9
20	332°29.3	140°30.7	28.6	103°18.8	29.7	215°58.9	16.4	334°58.5
21	347°31.7	155°30.3	29.8	118°19.5	30.2	231°01.2	16.3	350°01.1
22	2°34.2	170°29.9	31.0	133°20.2	30.7	246°03.5	16.3	5°03.7
23	17°36.6	185°29.5	32.2	148°20.9	30.6	261°05.8	16.3	20°06.3
Mer.pass. 21:50			ν -0.4' d 1.2' m -3.92			ν 0.7' d 0.5' m 1.50		

Stars		
	SHA	Dec
Alpheratz	357°33.8	29°14.2
Ankaa	353°06.1	-42°09.9
Schedar	349°29.8	-56°40.9
Diphda	348°46.3	-17°50.6
Achernar	335°19.1	-57°06.3
Hamal	327°50.1	23°35.2
Polaris	313°15.1	89°22.3
Acamar	315°10.9	-40°11.9
Menkar	314°05.2	-4°11.6
Mirfak	308°26.9	49°57.2
Aldebaran	290°38.6	16°33.7
Rigel	281°03.0	-8°10.1
Capella	280°20.7	46°01.3
Bellatrix	278°22.0	6°22.5
Elath	278°00.8	28°37.7
Anilam	275°36.9	-1°11.0
Betelgeuse	270°51.2	7°24.8
Canopus	263°51.9	-52°42.2
Sirius	258°25.6	-16°44.9
Adhara	255°05.3	-29°00.1
Procyon	244°50.1	5°09.6
Pollux	243°16.5	27°57.8
Avior	234°14.6	-59°35.1
Shulaim	222°46.0	-43°31.9
Miaplacidus	221°38.5	-69°49.0
Alphard	217°47.3	-8°46.1
Regulus	207°33.9	11°50.5
Dubhe	193°40.7	61°36.6
Denebola	182°24.6	14°25.7
Gienah	175°43.3	-17°41.0
Acrux	173°00.1	-63°14.4
Gacrux	171°51.5	-57°15.3
Alioth	166°12.9	55°49.1
Spica	158°22.0	-11°17.7
Alkaid	152°52.0	49°11.1
Hadar	148°35.8	-60°29.8
Menkent	147°57.3	-36°29.7
Arcturus	145°47.7	19°03.0
Rigel Kent.	139°40.1	-60°56.5
Kochab	137°20.9	74°03.0
Zuben ubi	136°55.7	-16°08.9
Alphecca	126°03.5	26°37.8
Antares	112°15.4	-26°29.3
Atria	107°09.4	-69°04.6
Sabik	102°02.4	-15°45.4
Shaula	96°09.8	-37°07.4
Rasalhague	95°58.2	12°32.6
Eltanin	90°42.2	51°29.3
Kaus Aust.	83°31.8	-34°22.4
Vega	80°33.0	38°48.7
Nunki	75°47.1	-26°15.9
Altair	61°59.4	8°56.3
Peacock	53°04.7	-56°39.3
Deneb	49°25.3	-45°22.6
Enif	33°38.0	9°59.8
Al Na'ir	27°31.9	-46°50.3
Fomalhaut	15°13.6	-29°29.1
Scheat	13°44.4	28°13.6
Markab	13°29.0	15°20.8
Oct 21 Tue		
Venus	171°16.4	10.36
Mars	132°50.5	13.09
Jupiter	243°41.3	05.46
Saturn	2°20.2	21.48
Oct 22 Wed		
Venus	170°07.7	10.37
Mars	132°07.9	13.08
Jupiter	243°37.0	05.42
Saturn	2°23.3	21.44
Oct 23 Thu		
Venus	168°58.8	10.38
Mars	131°25.3	13.07
Jupiter	243°32.9	05.40
Saturn	2°26.6	21.40
Horizontal parallax		
Venus:	0.1	
Mars:	0.1	

Aries			Venus			Mars			Jupiter			Saturn		
Fri	GHA		GHA	Dec		GHA	Dec		GHA	Dec		GHA	Dec	
0	32°39.1	200°29.1	S04°33.4	163°21.6	S18°31.1	276°08.1	N21°16.3	35°08.9	S03°47.3					
1	47°41.6	215°28.6	34.6	178°22.2	31.6	291°10.4	16.3	50°11.5	47.3					
2	62°44.0	230°28.2	35.9	193°22.9	32.1	306°12.7	16.2	65°14.0	47.4					
3	77°46.5	245°27.8	.. 37.1	208°23.6	.. 32.6	321°15.0	.. 16.2	80°16.6	.. 47.4					
4	92°49.0	260°27.4	38.3	223°24.3	33.0	336°17.3	16.2	95°19.2	47.5					
5	107°51.4	275°27.0	39.5	238°24.9	33.5	351°19.6	16.2	110°21.8	47.5					
6	122°53.9	290°26.6	S03°40.7	253°25.6	S18°34.0	6°21.9	N21°16.2	125°24.4	S03°47.6					
7	137°56.4	305°26.2	42.0	268°26.3	34.5	21°24.2	16.1	140°27.0	47.6					
8	152°58.8	320°25.8	43.2	283°27.0	35.0	36°26.6	16.1	155°29.6	47.7					
9	168°01.3	335°25.4	.. 44.4	298°27.6	.. 35.4	51°28.9	.. 16.1	170°32.2	.. 47.7					
10	183°03.8	350°25.0	45.6	313°28.3	35.9	66°31.2	16.1	185°34.8	47.8					
11	198°06.2	5°24.6	46.8	328°29.0	36.4	81°33.5	16.1	200°37.4	47.8					
12	213°08.7	20°24.1	S03°48.0	343°29.6	S18°36.9	96°35.8	N21°16.0	215°40.0	S03°47.9					
13	228°11.1	35°23.7	49.3	358°30.3	37.3	111°38.1	16.0	230°42.6	47.9					
14	243°13.6	50°23.3	50.5	13°31.0	37.8	126°40.4	16.0	245°45.2	48.0					
15	258°16.1	65°22.9	.. 51.7	28°31.7	.. 38.3	141°42.7	.. 16.0	260°47.8	.. 48.0					
16	273°18.5	80°22.5	52.9	43°32.3	38.8	156°45.0	16.0	275°50.4	48.1					
17	288°21.0	95°22.1	54.1	58°33.0	39.3	171°47.3	15.9	290°53.0	48.1					
18	303°23.5	110°21.7	S03°55.3	73°33.7	S18°39.7	186°49.7	N21°15.9	305°55.6	S03°48.2					
19	318°25.9	125°21.3	56.6	88°34.4	40.2	201°52.0	15.9	320°58.1	48.2					
20	333°28.4	140°20.9	57.8	103°35.0	40.7	216°54.3	15.9	336°00.7	48.3					
21	348°30.9	155°20.4	03°59.0	118°35.7	.. 41.2	231°56.6	.. 15.8	351°03.3	.. 48.3					
22	3°33.3	170°20.0	04°00.2	133°36.4	41.6	246°58.9	15.8	6°05.9	48.4					
23	18°35.8	185°19.6	01.4	148°37.0	42.1	262°01.2	15.8	21°08.5	48.4					
Mer.pass. 21:46 ν -0.4' d 1.2' m -3.92 ν 0.7' d 0.5' m 1.49 ν 2.3' d -0.0' m -2.27 ν 2.6' d 0.1' m 0.73														

Sat	GHA		GHA	Dec		GHA	Dec		GHA	Dec	
0	33°38.2	200°19.2	S04°02.6	163°37.7	S18°42.6	277°03.5	N21°15.8	36°11.1	S03°48.5		
1	48°40.7	215°18.8	03.9	178°38.4	43.3	292°05.8	15.8	51°13.7	48.5		
2	63°43.2	230°18.0	05.1	193°39.0	43.5	307°08.2	15.8	66°16.3	48.6		
3	78°45.6	245°18.0	.. 06.3	208°39.7	.. 44.0	322°10.5	.. 15.7	81°18.9	.. 48.6		
4	93°48.1	260°17.6	07.5	223°40.4	44.5	337°12.8	15.7	96°21.5	48.7		
5	108°50.6	275°17.1	08.7	238°41.0	45.0	352°15.1	15.7	111°24.1	48.7		
6	123°53.0	290°16.7	S04°09.9	253°41.7	S18°45.4	7°17.4	N21°15.7	126°26.7	S03°48.8		
7	138°55.5	305°16.3	11.2	268°42.4	45.9	22°19.7	15.7	141°29.3	48.8		
8	153°58.0	320°15.9	12.4	283°43.1	46.4	37°22.0	15.6	156°31.8	48.9		
9	169°00.4	335°15.5	.. 13.6	298°43.7	.. 46.9	52°24.4	.. 15.6	171°34.4	.. 48.9		
10	184°02.9	350°15.1	14.8	313°44.4	47.3	67°26.7	15.6	186°37.0	49.0		
11	199°05.4	5°14.7	16.0	328°45.1	47.8	82°29.0	15.6	201°39.6	49.0		
12	214°07.8	20°14.2	S04°17.2	343°45.7	S18°48.3	97°31.3	N21°15.6	216°42.2	S03°49.1		
13	229°10.3	35°13.8	18.4	358°46.4	48.7	112°33.6	15.5	231°44.8	49.1		
14	244°12.7	50°13.4	19.7	13°47.1	49.2	127°35.9	15.5	246°47.4	49.2		
15	259°15.2	65°13.0	.. 20.9	28°47.7	.. 49.7	142°38.3	.. 15.5	261°50.0	.. 49.2		
16	274°17.7	80°12.6	22.1	43°48.4	50.2	157°40.6	15.5	276°52.6	49.3		
17	289°20.1	95°12.2	23.3	58°49.0	50.6	172°42.9	15.5	291°55.2	49.3		
18	304°22.6	110°11.7	S04°24.5	73°49.4	S18°51.1	187°45.2	N21°15.4	306°57.8	S03°49.4		
19	319°25.1	125°11.3	25.7	88°50.4	51.6	202°47.5	15.4	322°00.4	49.4		
20	334°27.5	140°10.9	26.9	103°51.0	52.0	217°49.9	15.4	337°02.9	49.5		
21	349°30.0	155°10.5	.. 28.2	118°51.7	.. 52.5	232°52.2	.. 15.4	352°05.5	.. 49.5		
22	4°32.5	170°10.1	29.4	133°52.4	53.0	247°54.5	15.4	7°08.1	49.6		
23	19°34.9	185°09.7	30.6	148°53.0	53.4	262°56.8	15.3	22°10.7	49.6		
Mer.pass. 21:42 ν -0.4' d 1.2' m -3.92 ν 0.7' d 0.5' m 1.49 ν 2.3' d -0.0' m -2.27 ν 2.6' d 0.0' m 0.73											

Sun	GHA		GHA	Dec		GHA	Dec		GHA	Dec	
0	34°37.4	200°09.2	S04°31.8	163°53.7	S18°53.9	277°59.1	N21°15.3	37°13.3	S03°49.7		
1	49°39.9	215°08.8	33.0	178°54.4	54.4	293°01.5	15.3	52°15.9	49.7		
2	64°42.3	230°08.4	34.2	193°55.0	54.8	308°03.8	15.3	67°18.5	.. 49.7		
3	79°44.8	245°08.0	.. 35.4	208°55.7	.. 55.3	323°06.1	.. 15.3	82°21.1	.. 49.8		
4	94°47.2	260°07.6	36.6	223°56.3	55.8	338°08.4	15.3	97°23.7	49.8		
5	109°49.7	275°07.2	37.9	238°57.0	56.3	353°10.8	15.2	112°26.2	49.9		
6	124°52.2	290°06.7	S04°39.1	253°57.7	S18°56.7	8°13.1	N21°15.2	127°28.8	S03°49.9		
7	139°54.6	305°06.3	40.3	268°58.3	57.2	23°15.4	15.2	142°31.4	50.0		
8	154°57.1	320°05.9	41.5	283°59.0	57.7	38°17.7	15.2	157°34.0	50.0		
9	169°59.6	335°05.5	.. 42.7	298°59.6	.. 58.1	53°20.0	.. 15.2	172°36.6	.. 50.1		
10	185°02.0	350°05.1	43.9	314°00.3	58.6	68°22.4	15.1	187°39.2	50.1		
11	200°04.5	5°04.7	45.1	329°01.0	59.1	83°24.7	15.1	202°41.8	50.2		
12	215°07.0	20°04.2	S04°46.3	344°01.6	S18°59.5	98°27.0	N21°15.1	217°44.4	S03°50.2		
13	230°09.4	35°03.8	47.6	359°02.3	19°00.0	113°29.3	15.1	232°47.0	50.3		
14	245°11.9	50°03.4	48.8	14°02.9	50.4	128°31.7	15.1	247°49.5	50.3		
15	260°14.4	65°03.0	.. 50.0	29°03.6	.. 00.9	143°34.0	.. 15.1	262°52.1	.. 50.4		
16	275°16.8	80°02.6	51.2	44°04.3	01.4	158°36.3	15.0	277°54.7	50.4		
17	290°19.3	95°02.1	52.4	59°04.9	01.8	173°38.7	15.0	292°57.3	50.5		
18	305°21.7	110°01.7	S04°53.6	74°05.6	S19°02.3	188°41.0	N21°15.0	307°59.9	S03°50.5		
19	320°24.2	125°01.3	54.8	89°06.2	02.8	203°43.3	15.0	323°02.5	50.6		
20	335°26.7	140°00.9	56.0	104°06.9	03.2	218°45.6	15.0	338°05.1	50.6		
21	350°29.1	155°00.5	.. 57.2	119°07.6	.. 03.7	233°48.0	.. 15.0	353°07.7	.. 50.7		
22	5°31.6	170°00.0	58.5	134°08.2	04.2	248°50.3	14.9	8°10.2	50.7		
23	20°34.1	184°59.6	59.7	149°08.9	04.6	263°52.6	14.9	23°12.8	50.7		
Mer.pass. 21:38 ν -0.4' d 1.2' m -3.91 ν 0.7' d 0.5' m 1.48 ν 2.3' d -0.0' m -2.28 ν 2.6' d 0.0' m 0.74											

Stars		
	SHA	Dec
Alpheratz	357°33.8	29°14.2
Ankaa	353°06.1	-42°09.9
Schedar	349°29.8	56°40.9
Diphda	348°46.3	-17°50.6
Achernar	335°19.1	-57°06.3
Hamal	327°50.1	23°35.2
Polaris	313°14.2	89°22.3
Acamar	315°10.9	-40°11.9
Menkar	314°05.2	4°11.6
Mirfak	308°26.9	49°57.2
Aldebaran	290°38.6	16°33.7
Rigel	281°03.0	-8°10.1
Capella	280°20.6	46°01.3
Bellatrix	278°22.0	6°22.5
Elnath	278°50.8	28°37.7
Anilam	275°36.9	-1°11.0
Betelgeuse	270°51.2	7°24.8
Canopus	263°51.9	-52°42.2
Sirius	258°25.5	-16°44.9
Adhara	255°05.2	-29°00.1
Procyon	244°50.1	5°09.6
Pollux	243°16.5	27°57.8
Avior	234°14.5	-59°35.1
Suhail	222°46.0	-43°31.9
Miaplacidus	221°38.4	-69°49.0
Alphard	217°47.2	-8°46.1
Regulus	207°33.9	11°50.5
Dubhe	193°40.7	61°36.5
Denebola	182°24.6	14°25.7
Gienah	175°43.2	-17°41.0
Acrux	173°00.1	-63°14.4
Gacrux	171°51.5	-57°15.3
Alioth	166°12.9	55°49.1
Spica	158°22.0	-11°17.7
Alkaid	152°52.0	49°11.1
Hadar	148°35.8	-60°29.8
Menkent	147°57.3	-36°29.7
Arcturus	145°47.7	19°02.9
Rigel Kent	139°40.1	-60°56.5
Kochab	137°20.9	74°03.9
Zuben'ubi	136°55.7	-16°08.9
Alphecca	126°03.5	-26°37.8
Antares	112°15.4	-26°29.3
Atria	107°09.4	-69°04.4
Sabik	102°02.3	-15°45.4
Shaula	96°09.8	-37°07.4
Rasalhague	95°58.2	12°32.6
Eltanin	90°42.2	51°29.3
Kaus Aust.	83°31.9	-34°22.4
Vega	80°33.0	38°48.7
Nunki	75°47.1	-26°15.9
Altair	61°59.4	8°56.3
Peacock	53°04.7	-56°39.3
Deneb	49°25.3	45°22.6
Enif	33°38.1	9°59.8
Al Na'ir	27°31.9	-46°50.3
Fomalhaut	15°13.6	-29°29.1
Scheat	13°44.4	-28°13.6
Markab	13°29.0	-21°39.0
Oct 24 Fri		
Venus	167°49.4	10:38
Jupiter	243°29.0	13:06
Saturn	2°29.7	05:35
Oct 25 Sat		
Venus	166°41.0	10:39
Mars	129°59.5	13:05
Jupiter	243°25.5	05:31
Saturn	2°32.9	21:32
Oct 26 Sun		
Venus	165°31.9	10:40
Mars	129°16.3	13:04
Jupiter	243°21.8	05:27
Saturn	2°35.9	21:27
Horizontal parallax		
Venus:		0.1
Mars:		0.1

Aries			Venus			Mars			Jupiter			Saturn		
Mon	GHA		GHA	Dec		GHA	Dec		GHA	Dec		GHA	Dec	
0	35°36.5	199°59.2	S05°00.9	164°09.5	S19°05.1	278°55.0	N21°14.9	38°15.4	S03°50.8					
1	50°39.0	214°58.8	02.1	179°10.2	05.5	293°57.3	14.9	53°18.0	50.8					
2	65°41.5	229°58.3	03.3	194°10.8	06.0	308°59.6	14.9	68°20.6	50.9					
3	80°43.9	244°57.9	.. 04.5	209°11.5	.. 06.5	324°01.9	.. 14.8	83°23.2	.. 50.9					
4	95°46.4	259°57.5	05.7	224°12.2	05.7	339°04.3	14.8	98°25.8	51.0					
5	110°48.9	274°57.1	06.9	239°12.8	07.4	354°06.6	14.8	113°28.4	51.0					
6	125°51.3	289°56.7	S05°08.1	254°13.5	S19°07.9	9°08.9	N21°14.8	128°30.9	S03°51.1					
7	140°53.8	304°56.2	09.3	269°14.1	08.3	24°11.3	14.8	143°33.5	51.1					
8	155°56.2	319°55.8	10.5	284°14.8	08.8	39°13.6	14.8	158°36.1	51.2					
9	170°58.7	334°55.4	.. 11.8	299°15.4	.. 09.2	54°15.9	.. 14.7	173°38.7	.. 51.2					
10	186°01.2	349°55.0	13.0	314°16.1	09.7	69°18.3	14.7	188°41.3	51.3					
11	201°03.6	4°54.5	14.2	329°16.7	10.2	84°20.6	14.7	203°43.9	51.3					
12	216°06.1	19°54.1	S05°15.4	344°17.4	S19°10.6	99°22.9	N21°14.7	218°46.5	S03°51.3					
13	231°08.6	34°53.7	16.6	359°18.0	11.1	114°25.3	14.7	233°49.0	51.4					
14	246°11.0	49°53.3	17.8	14°18.7	11.5	129°27.6	14.7	248°51.6	51.4					
15	261°13.5	64°52.8	.. 19.0	29°19.3	.. 12.0	144°29.9	.. 14.7	263°54.2	.. 51.5					
16	276°16.0	79°52.4	20.2	44°20.0	12.5	159°32.3	14.6	278°56.8	51.5					
17	291°18.4	94°52.0	21.4	59°20.6	12.9	174°34.6	14.6	293°59.4	51.6					
18	306°20.9	109°51.6	S05°22.6	74°21.3	S19°13.4	189°36.9	N21°14.6	309°02.0	S03°51.6					
19	321°23.3	124°51.1	23.8	89°21.9	13.8	204°39.3	14.6	324°04.5	51.7					
20	336°25.8	139°50.7	25.0	104°22.6	14.3	219°41.6	14.6	339°07.1	51.7					
21	351°28.3	154°50.3	.. 26.2	119°23.3	.. 14.7	234°43.9	.. 14.6	354°09.7	.. 51.8					
22	6°30.7	169°49.9	27.4	134°23.9	15.2	249°46.3	14.5	9°12.3	51.8					
23	21°33.2	184°49.4	28.7	149°24.6	15.7	264°48.6	14.5	24°14.9	51.8					
Mer.pass. 21:34			ν -0.4' d 1.2' m -3.91			ν 0.7' d 0.5' m 1.48			ν 2.3' d -0.0' m -2.29			ν 2.6' d 0.0' m 0.74		

Tue	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	36°35.7	199°49.0	S05°29.9	164°25.2	S19°16.1	279°51.0	N21°14.5	39°17.5	S03°51.9
1	51°38.1	214°48.6	31.1	179°25.9	16.6	294°53.3	14.5	54°20.0	51.9
2	66°40.6	229°48.2	32.3	194°26.5	17.0	309°55.6	14.5	69°22.6	52.0
3	81°43.1	244°47.7	.. 33.5	209°27.2	.. 17.5	324°58.0	.. 14.5	84°25.2	.. 52.0
4	96°45.5	259°47.3	34.7	224°27.8	17.9	340°00.3	14.4	99°27.8	52.1
5	111°48.0	274°46.9	35.9	239°28.4	18.4	355°02.7	14.4	114°30.4	52.1
6	126°50.5	289°46.5	S05°37.1	254°29.1	S19°18.8	10°05'00	N21°14.4	129°33.0	S03°52.2
7	141°52.9	304°46.0	38.3	269°29.7	19.3	25°07'3	14.4	144°35.5	52.2
8	156°55.4	319°45.6	39.5	284°30.4	19.7	40°09.7	14.4	159°38.1	52.3
9	171°57.8	334°45.2	.. 40.7	299°31.0	.. 20.2	55°12'0	.. 14.4	174°40.7	.. 52.3
10	187°00.3	349°44.7	41.9	314°31.7	20.7	70°14.4	14.4	189°43.3	52.3
11	202°02.8	4°44.3	43.1	329°32.3	21.1	85°16.7	14.3	204°45.9	52.4
12	217°05.2	19°43.9	S05°44.3	344°33.0	S19°21.6	100°19.0	N21°14.3	219°48.5	S03°52.4
13	232°07.7	34°43.4	45.5	359°33.6	22.0	115°21.4	14.3	234°51.0	52.5
14	247°10.2	49°43.0	46.7	14°34.3	22.5	130°23.7	14.3	249°53.6	52.5
15	262°12.6	64°42.6	.. 47.9	29°34.9	.. 22.9	145°26.1	.. 14.3	264°56.2	.. 52.6
16	277°15.1	79°42.2	49.1	44°35.6	23.4	160°28.4	14.3	279°58.8	52.6
17	292°17.6	94°41.7	50.3	59°36.2	23.8	175°30.7	14.2	295°01.4	52.7
18	307°20.0	109°41.3	S05°51.7	74°36.9	S19°24.3	190°33.1	N21°14.2	310°04.0	S03°52.7
19	322°22.5	124°40.9	52.7	89°37.5	24.3	205°35.4	14.2	325°06.5	52.7
20	337°25.0	139°40.4	53.9	104°38.1	25.2	220°37.8	14.2	340°09.1	52.8
21	352°27.4	154°40.0	.. 55.1	119°38.8	.. 25.6	235°40.1	.. 14.2	355°11.7	.. 52.8
22	7°29.9	169°39.6	56.3	134°39.4	26.1	250°42.5	14.2	10°14.3	52.9
23	22°32.3	184°39.1	57.5	149°40.1	26.5	265°44.8	14.2	25°16.9	52.9
Mer.pass. 21:30 ν -0.4' d 1.2' m -3.91 ν 0.6' d 0.5' m 1.48 ν 2.3' d -0.0' m -2.29 ν 2.6' d 0.0' m 0.75									

Wed	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	37°34.8	199°38.7	S05°58.7	164°40.7	S19°27.0	280°47.2	N21°14.1	40°19.4	S03°53.0
1	52°37.3	214°38.3	05°59.9	179°41.4	27.4	295°49.5	14.1	55°22.0	53.0
2	67°39.7	229°37.8	06°01.1	194°42.0	27.9	310°51.9	14.1	70°24.6	53.0
3	82°42.2	244°37.4	.. 02.3	209°42.6	.. 28.3	325°54.2	.. 14.1	85°27.2	.. 53.1
4	97°44.7	259°37.0	03.5	224°43.3	28.8	340°56.5	14.1	100°29.8	53.1
5	112°47.1	274°36.5	04.7	239°43.9	29.2	355°58.9	14.1	115°32.3	53.2
6	127°49.6	289°36.1	S06°06.0	254°44.6	S19°29.7	11°01.2	N21°14.1	130°34.9	S03°53.2
7	142°52.1	304°35.7	07.2	269°45.2	30.1	26°03.6	14.0	145°37.5	53.3
8	157°54.5	319°35.2	08.3	284°45.9	30.6	41°05.9	14.0	160°40.1	53.3
9	172°57.0	334°34.8	.. 09.5	299°46.5	.. 31.0	56°08.3	.. 14.0	175°42.7	.. 53.4
10	187°59.5	349°34.4	10.7	314°47.1	31.5	71°10.6	14.0	190°45.2	53.4
11	203°01.9	4°33.9	11.9	329°47.8	31.9	86°13.0	14.0	205°47.8	53.4
12	218°04.4	19°33.5	S06°13.1	344°48.4	S19°32.3	101°15.3	N21°14.0	220°50.4	S03°53.5
13	233°06.8	34°33.1	14.3	359°49.1	32.8	116°17.7	14.0	235°53.0	53.5
14	248°09.3	49°32.6	15.5	14°49.7	33.2	131°20.0	14.0	250°55.6	53.6
15	263°11.8	64°32.2	.. 16.7	29°50.3	.. 33.7	146°22.4	.. 13.9	265°58.1	.. 53.6
16	278°14.2	79°31.8	17.9	44°51.0	34.1	161°24.7	13.9	281°00.7	53.7
17	293°16.7	94°31.3	19.1	59°51.6	34.6	176°27.1	13.9	296°03.3	53.7
18	308°19.2	109°30.9	S06°20.9	74°52.3	S19°35.0	191°29.4	N21°13.9	311°05.9	S03°53.7
19	323°21.6	124°30.5	21.5	89°52.9	35.5	206°31.8	13.9	326°08.4	53.8
20	338°24.1	139°30.0	22.7	104°53.5	35.9	221°34.2	13.9	341°11.0	53.8
21	353°26.6	154°29.6	.. 23.9	119°54.2	.. 36.4	236°36.5	.. 13.9	356°13.6	.. 53.9
22	8°29.0	169°29.1	25.1	134°54.8	36.8	251°38.9	13.8	11°16.2	53.9
23	23°31.5	184°28.7	26.3	149°55.4	37.2	266°41.2	13.8	26°18.8	54.0
Mer.pass. 21:26 ν -0.4' d 1.2' m -3.91 ν 0.6' d 0.4' m 1.47 ν 2.3' d -0.0' m -2.30 ν 2.6' d 0.0' m 0.75									

Stars		
	SHA	Dec
Alpheratz	357°33.8	29°14.2
Ankaa	353°06.1	-42°09.9
Schedar	349°29.8	56°40.9
Diphda	348°46.3	-17°50.6
Achernar	335°19.1	-57°06.3
Hamal	327°50.1	23°35.2
Polaris	313°13.4	89°22.3
Acamar	315°10.9	-40°11.9
Menkar	314°05.2	4°11.6
Mirfak	308°26.9	49°57.2
Aldebaran	290°38.6	16°33.7
Rigel	281°03.0	-8°10.1
Capella	280°20.6	46°01.4
Bellatrix	278°22.0	6°22.5
Elath	278°00.8	28°37.7
Anilam	275°36.9	-1°11.0
Betelgeuse	270°51.2	7°24.8
Canopus	263°51.8	-52°42.2
Sirius	258°25.5	-16°44.9
Adhara	255°05.2	-29°00.1
Procyon	244°50.1	5°09.6
Pollux	243°16.5	27°57.8
Avior	234°14.5	-59°35.1
Shulh	222°45.9	-43°31.9
Miaplacidus	221°38.4	-69°49.0
Alphard	217°47.2	-8°46.1
Regulus	207°33.9	11°50.5
Dubhe	193°40.6	61°36.5
Denebola	182°24.5	14°25.7
Gienah	175°43.2	-17°41.0
Acrux	173°00.0	-63°14.4
Gacrux	171°51.5	-57°15.3
Alioth	166°12.9	55°49.1
Spica	158°21.9	-11°17.7
Alkaid	152°52.0	49°11.0
Hadar	148°35.8	-60°29.8
Menkent	147°57.3	-36°29.7
Arcturus	145°47.7	19°02.9
Rigil Kent.	139°40.1	-60°56.5
Kochab	137°20.9	74°02.9
Zuben ubi	136°55.6	-16°08.9
Alphecca	126°03.5	26°37.8
Antares	112°15.4	-26°29.3
Atria	107°09.4	-69°04.6
Sabik	102°02.3	-15°45.4
Shaula	96°09.8	-37°07.4
Rasalhague	95°58.2	12°32.6
Eltanin	90°42.2	51°29.3
Kaus Aust.	83°31.9	-34°22.4
Vega	80°33.0	38°48.7
Nunki	75°47.1	-26°15.9
Altair	61°59.4	8°56.3
Peacock	53°04.7	-56°39.3
Deneb	49°25.4	45°22.6
Enif	33°36.1	9°59.8
Al Nair	27°39.9	-46°33.3
Fomalhaut	15°13.6	-29°29.1
Scheat	13°44.2	-28°13.6
Markab	13°29.1	-17°20.8
Oct 27 Mon	SHA	Mer, pass.
Venus	164°22.7	10.40
Jupiter	128°30.2	11.23
Jupiter	243°18.4	05.23
Saturn	2°38.9	21.23
Oct 28 Tue	SHA	Mer, pass.
Venus	163°13.3	10.41
Mars	127°49.5	13.02
Jupiter	243°15.3	05.25
Saturn	2°41.8	21.19
Oct 29 Wed	SHA	Mer, pass.
Venus	162°03.9	10.42
Mars	127°05.9	13.01
Jupiter	243°12.4	05.16
Saturn	2°44.6	21.15
Horizontal parallax		
Venus:		0.1
Mars:		0.1

Aries			Venus			Mars			Jupiter			Saturn		
Thu	GHA		GHA	Dec		GHA	Dec		GHA	Dec		GHA	Dec	
0	38°33.9		199°28.3	S06°27.5		164°56.1	S19°37.7		281°43.6	N21°13.8		41°21.3	S03°54.0	
1	53°36.4		214°27.8	28.7		179°56.7	38.1		296°45.9	13.8		56°23.9	54.0	
2	68°38.9		229°27.4	29.9		194°57.4	38.6		311°48.3	13.8		71°26.5	54.1	
3	83°41.3		244°27.0	31.1		209°58.0	39.0		326°50.6	13.8		86°29.1	54.1	
4	98°43.8		259°26.5	32.3		224°58.6	39.4		341°53.0	13.8		101°31.6	54.2	
5	113°46.3		274°26.1	33.5		239°59.3	39.9		356°55.3	13.8		116°34.2	54.2	
6	128°48.7		289°25.6	S06°34.7		254°59.9	S19°40.3		11°57.7	N21°13.7		131°36.8	S03°54.2	
7	143°51.2		304°25.2	35.9		270°00.5	40.8		27°00.1	13.7		146°39.4	54.3	
8	158°53.7		319°24.8	37.1		285°01.2	41.2		42°02.4	13.7		161°42.0	54.3	
9	173°56.1		334°24.3	38.3		300°01.8	41.7		57°04.8	13.7		176°44.5	54.4	
10	188°58.6		349°23.9	39.5		315°02.4	42.1		72°07.1	13.7		191°47.1	54.4	
11	204°01.1		4°23.4	40.7		330°03.1	42.5		87°09.5	13.7		206°49.7	54.5	
12	219°03.5		19°23.0	S06°41.9		345°03.7	S19°43.0		102°11.8	N21°13.7		221°52.3	S03°54.5	
13	234°06.0		34°22.6	43.1		0°04.3	43.4		117°14.2	13.7		236°54.8	54.5	
14	249°08.4		49°22.1	44.2		15°05.0	43.9		132°16.6	13.6		251°57.4	54.6	
15	264°10.9		64°21.7	45.4		30°05.6	44.3		147°18.9	13.6		267°00.0	54.6	
16	279°13.4		79°21.2	46.6		45°06.2	44.7		162°21.3	13.6		282°02.6	54.7	
17	294°15.8		94°20.8	47.8		60°06.9	45.2		177°23.6	13.6		297°05.1	54.7	
18	309°18.3		109°20.4	S06°49.0		75°07.5	S19°45.6		192°26.0	N21°13.6		312°07.7	S03°54.7	
19	324°20.8		124°19.9	50.2		90°08.1	46.0		207°28.4	13.6		327°10.3	54.8	
20	339°23.2		139°19.5	51.4		105°08.8	46.5		222°30.7	13.6		342°12.9	54.8	
21	354°25.7		154°19.0	52.6		120°09.4	46.9		237°33.1	13.6		357°15.4	54.9	
22	9°28.2		169°18.6	53.8		135°10.0	47.4		252°35.4	13.5		12°18.0	54.9	
23	24°30.6		184°18.1	55.0		150°10.7	47.8		267°37.8	13.5		27°20.6	54.9	
Mer.pass. 21:22 ν -0.4' d 1.2' m -3.91 ν 0.6' d 0.4' m 1.47 ν 2.4' d -0.0' m -2.31 ν 2.6' d 0.0' m 0.76														

Fri	GHA		GHA	Dec		GHA	Dec		GHA	Dec		GHA	Dec	
0	39°33.1		199°17.7	S06°56.2		165°11.3	S19°48.2		282°40.2	N21°13.5		42°23.2	S03°55.0	
1	54°35.6		214°17.2	57.4		180°11.9	48.7		297°42.5	13.5		57°25.7	55.0	
2	69°38.0		229°16.8	58.5		195°12.5	49.1		312°44.9	13.5		72°28.3	55.1	
3	84°40.5		244°16.4	06°59.7		210°13.2	49.5		327°47.3	13.5		87°30.9	55.1	
4	99°42.9		259°15.9	07°00.9		225°13.8	50.0		342°49.6	13.5		102°33.5	55.2	
5	114°45.4		274°15.5	02.1		240°14.4	50.4		357°52.0	13.5		117°36.0	55.2	
6	129°47.9		289°15.0	S07°03.3		255°15.1	S19°50.8		12°54.4	N21°13.5		132°38.6	S03°55.2	
7	144°50.3		304°14.6	04.0		270°15.7	51.3		27°56.7	13.4		147°41.2	55.3	
8	159°52.8		319°14.1	05.7		285°16.3	51.7		42°59.1	13.4		162°43.3	55.3	
9	174°55.3		334°13.7	06.9		300°16.9	52.1		58°01.4	13.4		177°46.7	55.4	
10	189°57.7		349°13.2	08.1		315°17.6	52.6		73°03.8	13.4		192°48.9	55.4	
11	205°00.2		4°12.8	09.2		330°18.2	53.0		88°06.2	13.4		207°51.5	55.4	
12	220°02.7		19°12.3	S07°10.4		345°18.8	S19°53.4		103°08.5	N21°13.4		222°54.0	S03°55.5	
13	235°05.1		34°11.9	11.6		0°19.5	53.9		118°10.9	13.4		237°56.6	55.5	
14	250°07.6		49°11.4	12.8		15°20.1	54.3		133°13.3	13.4		252°59.2	55.6	
15	265°10.0		64°11.0	14.0		30°20.7	54.7		148°15.6	13.4		268°01.8	55.6	
16	280°12.5		79°10.6	15.2		45°21.3	55.2		163°18.0	13.4		283°04.3	55.6	
17	295°15.0		94°10.1	16.4		60°22.0	55.6		178°20.4	13.3		298°06.9	55.7	
18	310°17.4		109°09.7	S07°17.6		75°22.6	S19°56.6		193°22.8	N21°13.3		313°09.5	S03°55.7	
19	325°19.9		124°09.2	18.7		90°23.2	56.5		208°25.1	13.3		328°12.0	55.8	
20	340°22.4		139°08.8	19.9		105°23.8	56.9		223°27.5	13.3		343°14.6	55.8	
21	355°24.8		154°08.3	21.1		120°24.5	57.3		238°29.9	13.3		358°17.2	55.8	
22	10°27.3		169°07.9	22.3		135°25.1	57.7		253°32.2	13.3		13°19.8	55.9	
23	25°29.8		184°07.4	23.5		150°25.7	58.2		268°34.6	13.3		28°22.3	55.9	
Mer.pass. 21:18 ν -0.4' d 1.2' m -3.91 ν 0.6' d 0.4' m 1.46 ν 2.4' d -0.0' m -2.31 ν 2.6' d 0.0' m 0.76														

Sat	GHA		GHA	Dec		GHA	Dec		GHA	Dec		GHA	Dec	
0	40°32.2		199°07.0	S07°24.7		165°26.3	S19°58.6		283°37.0	N21°13.3		43°24.9	S03°55.9	
1	55°34.7		214°06.5	25.9		180°27.0	59.0		298°39.3	13.3		58°27.5	56.0	
2	70°37.2		229°06.1	27.0		195°27.6	59.5		313°41.7	13.2		73°30.0	56.0	
3	85°39.6		244°06.6	28.2		210°28.2	19°59.9		328°44.1	13.2		88°32.6	56.1	
4	100°42.1		259°05.1	29.4		225°28.8	20°00.3		343°46.5	13.2		103°35.2	56.1	
5	115°44.5		274°07.4	30.6		240°29.4	00.7		358°48.8	13.2		118°37.8	56.1	
6	130°47.0		289°04.2	S07°31.8		255°30.1	S02°01.2		13°51.2	N21°13.2		133°40.3	S03°56.2	
7	145°49.5		304°03.8	33.0		270°30.7	01.6		28°53.6	13.2		148°42.9	56.2	
8	160°51.9		319°03.3	34.1		285°31.3	02.0		43°56.0	13.2		163°45.5	56.3	
9	175°54.4		334°02.9	35.3		300°31.9	02.5		58°58.3	13.2		178°48.0	56.3	
10	190°56.9		349°02.4	36.5		315°32.6	02.9		74°00.7	13.2		193°50.6	56.3	
11	205°59.3		4°02.0	37.7		330°33.2	03.3		89°03.1	13.2		208°53.2	56.4	
12	221°01.8		19°01.5	S07°38.9		345°33.8	S02°03.7		104°05.5	N21°13.2		223°55.7	S03°56.4	
13	236°04.3		34°01.1	40.0		0°34.4	04.2		119°07.8	13.1		238°58.3	56.5	
14	251°06.7		49°00.6	41.2		15°35.0	04.6		134°10.2	13.1		254°00.9	56.5	
15	266°09.2		64°00.2	42.4		30°35.7	05.0		149°12.6	13.1		269°03.5	56.5	
16	281°11.7		78°59.7	43.6		45°36.3	05.4		164°15.0	13.1		284°06.0	56.6	
17	296°14.1		93°59.3	44.8		60°36.9	05.9		179°17.3	13.1		299°08.6	56.6	
18	311°16.6		108°58.8	S07°45.9		75°37.5	S02°06.3		194°19.7	N21°13.1		314°21.1	S03°56.6	
19	326°19.0		123°53.8	47.1		90°38.1	06.7		209°22.1	13.1		329°13.7	56.7	
20	341°21.5		138°57.9	48.3		105°38.8	07.1		224°24.5	13.1		344°16.3	56.7	
21	356°24.0		153°57.4	49.5		120°39.4	07.5		239°26.8	13.1		359°18.9	56.8	
22	11°26.4		168°57.0	50.8		135°40.0	08.0		254°29.2	13.1		14°21.4	56.8	
23	26°28.9		183°56.5	51.8		150°40.6	08.4		269°31.6	13.1		29°24.0	56.8	
Mer.pass. 21:14 ν -0.5' d 1.2' m -3.91 ν 0.6' d 0.4' m 1.46 ν 2.4' d -0.0' m -2.32 ν 2.6' d 0.0' m 0.77														

Stars		
	SHA	Dec
Alpheratz	357°33.8	29°14.2
Ankaa	353°06.1	-42°10.0
Schedar	349°29.8	56°41.0
Diphda	348°46.3	-17°50.6
Achernar	335°19.1	-57°06.3
Hamal	327°50.1	23°35.2
Polaris	313°12.9	89°22.3
Acamar	315°10.8	-40°11.9
Menkar	314°05.1	4°11.6
Mirfak	308°26.8	49°57.2
Aldebaran	290°38.6	16°33.8
Rigel	281°03.0	-8°10.1
Capella	280°20.6	46°01.4
Bellatrix	278°21.9	6°22.5
Elnath	275°00.8	28°37.7
Alnilam	275°36.8	-1°11.0
Betelgeuse	270°51.2	7°24.8
Canopus	263°51.8	-52°42.2
Sirius	258°25.5	-16°44.9
Adhara	255°05.2	-29°00.1
Procyon	244°50.1	5°09.6
Pollux	243°16.4	27°57.8
Avior	234°14.4	-59°35.1
Suhail	222°45.9	-43°31.9
Miaplacidus	221°38.3	-69°49.0
Alphard	217°47.2	-8°46.1
Regulus	207°33.9	11°50.5
Dubhe	193°40.6	61°36.5
Denebola	182°24.5	14°25.7
Gienah	175°43.2	-17°41.0
Acrux	173°00.0	-63°14.3
Gacrux	171°51.5	-57°15.3
Alloth	166°12.9	55°49.1
Spica	158°21.9	-11°27.7
Alkaid	152°52.0	49°11.0
Hadar	148°35.8	-60°29.8
Menkent	147°57.3	-36°29.7
Arcturus	145°47.7	19°02.9
Rigel Kent.	139°40.1	-60°56.5
Kochab	137°20.9	74°02.9
Zuben'ubi	136°55.6	-16°08.9

Aries			Venus			Mars			Jupiter			Saturn		
Sun	GHA	Dec	GHA	Dec		GHA	Dec		GHA	Dec		GHA	Dec	
0	41°31.4	198°56.1	S07°53.0	165°41.2	S20°08.8	284°34.0	N21°13.0	44°26.6	S03°56.9					
1	56°33.8	213°55.6	54.2	180°41.8	09.2	299°36.4	13.0	59°29.1	56.9					
2	71°36.3	228°55.1	55.4	195°42.5	09.7	314°38.7	13.0	74°31.7	56.9					
3	86°38.8	243°54.7	56.6	210°43.1	10.1	329°41.1	13.0	89°34.3	57.0					
4	101°41.2	258°54.7	57.7	225°43.7	10.5	344°43.5	13.0	104°36.8	57.0					
5	116°43.7	273°53.8	07°58.9	240°44.3	10.9	359°45.9	13.0	119°39.4	57.1					
6	131°46.1	288°53.3	S08°00.1	255°44.9	S20°11.3	14°48.3	N21°13.0	134°42.0	S03°57.1					
7	146°48.6	303°52.8	01.3	270°45.5	11.8	29°50.6	13.0	149°44.5	57.1					
8	161°51.1	318°52.4	02.4	285°46.2	12.2	44°53.0	13.0	164°47.1	57.2					
9	176°53.5	333°51.9	03.6	300°46.8	12.6	59°55.4	13.0	179°49.7	57.2					
10	191°56.0	348°51.5	04.8	315°47.4	13.0	74°57.8	13.0	194°52.2	57.2					
11	206°58.5	3°51.0	06.0	330°48.0	13.4	90°00.2	13.0	209°54.8	57.3					
12	222°00.9	18°50.5	S08°07.1	345°48.6	S20°13.9	105°02.6	N21°12.9	224°57.4	S03°57.3					
13	237°03.4	33°50.1	08.3	3°49.2	14.3	120°04.9	12.9	239°59.9	57.4					
14	252°05.9	48°49.6	09.5	15°49.8	14.7	135°07.3	12.9	255°02.5	57.4					
15	267°08.3	63°49.2	10.7	30°50.4	15.1	150°09.7	12.9	270°05.1	57.4					
16	282°10.8	78°48.7	11.8	45°51.1	15.5	165°12.1	12.9	285°07.6	57.5					
17	297°13.3	93°48.2	13.0	60°51.7	15.9	180°14.5	12.9	300°10.2	57.5					
18	312°15.7	108°47.8	S08°14.2	75°52.3	S20°16.4	195°16.9	N21°12.9	315°12.8	S03°57.5					
19	327°18.2	123°47.3	15.3	90°52.9	16.8	210°19.3	12.9	330°15.3	57.6					
20	342°20.6	138°46.8	16.5	105°53.5	17.2	225°21.6	12.9	345°17.9	57.6					
21	357°23.1	153°46.4	17.7	120°54.1	17.6	240°24.0	12.9	0°20.5	57.6					
22	12°25.6	168°45.9	18.9	135°54.7	18.0	255°26.4	12.9	15°23.0	57.7					
23	27°28.0	183°45.4	20.0	150°55.3	18.4	270°28.8	12.9	30°25.6	57.7					
Mer.pass. 21:10			ν -0.5' d 1.2' m -3.91			ν 0.6' d 0.4' m 1.45			ν 2.4' d -0.0' m -2.33			ν 2.6' d 0.0' m 0.77		

Mon	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	42°30.5	198°45.0	S08°21.2	165°56.0	S20°18.9	285°31.2	N21°12.9	45°28.2
1	57°33.0	213°44.5	22.4	180°56.6	19.3	300°33.6	12.8	60°30.7
2	72°35.4	228°44.1	23.5	195°57.2	19.7	315°36.0	12.8	75°33.3
3	87°37.9	243°43.6	24.7	210°57.8	20.1	330°38.4	12.8	90°35.8
4	102°40.4	258°43.1	25.9	225°58.4	20.5	345°40.7	12.8	105°38.4
5	117°42.8	273°42.7	27.1	240°59.0	20.9	0°43.1	12.8	120°41.0
6	132°45.3	288°42.2	S08°28.2	255°59.6	S20°21.3	15°45.5	N21°12.8	135°43.5
7	147°47.7	303°41.7	29.4	271°00.2	21.8	30°47.9	12.8	150°46.1
8	162°50.2	318°41.3	30.6	286°00.8	22.2	45°50.3	12.8	165°48.7
9	177°52.7	333°40.8	31.7	301°01.4	22.6	60°52.7	12.8	180°51.2
10	192°55.1	348°40.3	32.9	316°02.1	23.0	75°55.1	12.8	195°53.8
11	207°57.6	3°39.8	34.1	331°02.7	23.4	90°57.5	12.8	210°56.4
12	223°00.1	18°39.4	S08°35.2	346°03.3	S20°23.8	105°59.9	N21°12.8	225°58.9
13	238°02.5	33°38.9	36.4	1°03.9	24.2	121°02.3	12.8	241°01.5
14	253°05.0	48°38.4	37.6	16°04.5	24.6	136°04.7	12.8	256°04.0
15	268°07.5	63°38.0	38.7	31°05.1	25.0	151°07.0	12.8	271°06.6
16	283°09.9	78°37.5	39.9	46°05.7	25.5	166°09.4	12.8	286°09.2
17	298°12.4	93°37.0	41.1	61°06.3	25.9	181°11.8	12.7	301°11.7
18	313°14.9	108°36.6	S08°42.2	76°06.9	S20°26.3	196°14.2	N21°12.7	316°14.3
19	328°17.3	123°36.1	43.4	91°07.5	26.7	211°16.6	12.7	331°16.8
20	343°19.8	138°35.6	44.6	106°08.1	27.1	226°19.0	12.7	346°19.4
21	358°22.2	153°35.1	45.7	121°08.7	27.5	241°21.4	12.7	1°22.0
22	13°24.7	168°34.7	46.9	136°09.3	27.9	256°23.8	12.7	16°24.5
23	28°27.2	183°34.2	48.1	151°09.9	28.3	271°26.2	12.7	31°27.1
Mer.pass. 21:06			ν -0.5' d 1.2' m -3.91			ν 0.6' d 0.4' m 1.45		

Tue	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	43°29.6	198°33.7	S08°49.2	166°10.5	S20°28.7	286°28.6	N21°12.7	46°29.7
1	58°32.1	213°33.3	50.4	181°11.1	29.1	301°31.0	12.7	61°32.2
2	73°34.6	228°32.8	51.5	196°11.7	29.5	316°33.4	12.7	76°34.8
3	88°37.0	243°32.3	52.7	211°12.3	29.9	331°35.8	12.7	91°37.3
4	103°39.5	258°31.8	53.9	226°13.0	30.4	346°38.2	12.7	106°39.9
5	118°42.0	273°31.4	55.0	241°13.6	30.8	1°40.6	12.7	121°42.5
6	133°44.4	288°30.9	S08°56.2	256°14.2	S20°31.2	16°43.0	N21°12.7	136°45.0
7	148°46.9	303°30.4	57.3	271°14.8	31.6	31°45.4	12.7	151°47.6
8	163°49.3	318°29.9	58.5	286°15.4	32.0	46°47.8	12.7	166°50.1
9	178°51.8	333°29.5	08°59.7	301°16.0	32.4	61°50.2	12.7	181°52.7
10	193°54.3	348°29.0	09°00.8	316°16.6	32.8	76°52.6	12.6	196°55.3
11	208°56.7	3°28.5	02.0	331°17.2	33.2	91°55.0	12.6	211°57.8
12	223°59.2	18°28.0	S09°03.1	346°17.8	S20°33.6	106°57.4	N21°12.6	227°00.4
13	239°01.7	33°27.6	04.3	1°18.4	34.0	121°59.8	12.6	242°02.9
14	254°04.1	48°27.1	05.5	16°19.0	34.4	137°02.2	12.6	257°05.5
15	269°06.6	63°26.6	06.6	31°19.6	34.8	152°04.6	12.6	272°08.1
16	284°09.1	78°26.1	07.8	46°20.2	35.2	167°07.0	12.6	287°10.6
17	299°11.5	93°25.6	08.9	61°20.8	35.6	182°09.4	12.6	302°13.2
18	314°14.0	108°25.2	S09°10.1	76°21.4	S20°36.0	197°11.8	N21°12.6	317°15.7
19	329°16.5	123°24.7	11.3	91°22.0	36.4	212°14.2	12.6	332°18.3
20	344°18.9	138°24.2	12.4	106°22.6	36.8	227°16.6	12.6	347°20.8
21	359°21.4	153°23.7	13.6	121°23.2	37.2	242°19.0	12.6	2°23.4
22	14°23.8	168°23.2	14.7	136°23.8	37.6	257°21.4	12.6	17°26.0
23	29°26.3	183°22.8	15.9	151°24.4	38.0	272°23.8	12.6	32°28.5
Mer.pass. 21:03			ν -0.5' d 1.2' m -3.91			ν 0.6' d 0.4' m 1.44		

Stars		
SHA	Dec	
Alpheratz	357°33.8	29°14.2
Ankaa	353°06.1	-42°10.0
Schedar	349°29.8	56°41.0
Diphda	348°46.3	-17°50.6
Achernar	335°19.1	-57°06.3
Hamal	327°50.1	23°35.2
Polaris	313°12.6	89°22.4
Acamar	315°10.8	-40°11.9
Menkar	314°05.1	-41°11.6
Mirfak	308°26.8	49°57.2
Aldebaran	290°38.6	16°33.8
Rigel	281°03.0	-8°10.1
Capella	280°20.5	46°01.4
Bellatrix	278°21.9	6°22.5
Elath	278°00.8	28°37.8
Alnilam	275°36.8	-1°11.0
Betelgeuse	270°51.1	7°24.8
Canopus	263°51.8	-52°42.2
Sirius	258°25.5	-16°44.9
Adhara	255°05.2	-29°00.2
Procyon	244°50.0	5°09.6
Pollux	243°16.4	27°57.8
Avior	234°14.4	-59°35.2
Suhail	222°45.9	-43°31.9
Miaplacidus	221°38.3	-69°49.0
Alphard	217°47.2	-8°46.1
Regulus	207°33.9	11°50.5
Dubhe	193°40.6	61°36.5
Denebola	182°24.4	14°25.7
Gienah	175°43.2	-17°41.0
Acrux	173°00.0	-63°14.3
Gacrux	171°51.4	-57°15.3
Alioth	166°12.9	55°49.1
Spica	158°21.9	-11°17.7
Alkaid	152°51.9	49°31.0
Hadar	148°35.8	60°29.8
Menkent	147°57.3	-36°29.7
Arcturus	145°47.7	19°02.9
Rigel Kent.	139°40.1	-60°56.5
Kochab	137°10.0	74°02.9
Zuben'ubi	136°55.6	-16°08.9
Alphecca	126°03.5	26°37.7
Antares	112°15.4	-26°29.3
Atria	107°09.5	-69°04.5
Sabik	102°02.3	-15°45.4
Shaula	96°09.8	-37°07.4
Rasalhague	95°58.2	12°32.6
Eltanin	90°42.2	51°29.3
Kaus Aust.	83°31.9	-34°22.4
Vega	80°33.0	38°48.6
Nunki	75°47.1	-26°15.9
Altair	61°59.4	8°56.3
Peacock	53°04.8	-56°39.3
Deneb	49°25.4	-45°22.6
Enif	33°38.1	9°59.8
Al Na'ir	27°31.9	-46°50.3
Fomalhaut	15°13.6	-29°29.2
Scheat	13°44.4	28°13.6
Markab	13°29.1	15°20.8
Nov 02 Sun SHA Mer.pass		
Venus	157°24.7	10.45
Mars	124°09.9	12.57
Jupiter	243°02.6	05.01
Saturn	2°55.2	20.59
Nov 03 Mon SHA Mer.pass		
Venus	156°14.5	10.45
Mars	123°25.5	12.56
Jupiter	243°00.7	04.57
Saturn	2°57.7	20.55
Nov 04 Tue SHA Mer.pass		
Venus	155°04.1	10.46
Mars	122°40.9	12.55
Jupiter	242°59.0	04.53
Saturn	3°00.0	20.50
Horizontal parallax		
Venus:	0.1	
Mars:	0.1	

Sun			Moon		
h	GHA	Dec	GHA	ν	Dec
0	184°06.4	S14°45.4	50°11.2	12.3°	S03°22.8
1	199°06.4	46.4	64°42.4	12.2°	03°06.0
2	214°06.4	47.0	79°13.7	12.2°	02°49.

Aries			Venus			Mars			Jupiter			Saturn		
Wed	GHA	Dec	GHA	Dec		GHA	Dec		GHA	Dec		GHA	Dec	
0	44°28.8	198°22.3	S09°17.0	166°25.0	S20°38.4	287°26.2	N21°12.6	47°31.1	S03°59.4					
1	59°31.2	213°21.8	18.2	181°25.6	38.8	302°28.6	12.6	62°33.6	59.4					
2	74°33.7	228°21.3	19.3	196°26.2	39.2	317°31.0	12.6	77°36.2	59.5					
3	89°36.2	243°20.8	.. 20.5	211°26.8	.. 39.6	332°33.4	.. 12.6	92°38.7	.. 59.5					
4	104°38.6	258°20.4	21.7	226°27.3	40.0	347°35.8	12.6	107°41.3	59.5					
5	119°41.1	273°19.9	22.8	241°27.9	40.4	2°38.2	12.6	122°43.9	59.6					
6	134°43.6	288°19.4	S09°24.0	256°28.5	S20°40.8	17°40.7	N21°12.6	137°46.4	S03°59.6					
7	149°46.0	303°18.9	25.1	271°29.1	41.2	32°43.1	12.6	152°49.0	59.6					
8	164°48.5	318°18.4	26.3	286°29.7	41.6	47°45.5	12.6	167°51.5	59.7					
9	179°51.0	333°17.9	.. 27.4	301°30.3	.. 42.0	62°47.9	.. 12.5	182°54.1	.. 59.7					
10	194°53.4	348°17.5	28.6	316°30.9	42.4	77°50.3	12.5	197°56.6	59.7					
11	209°55.9	3°17.0	29.7	331°31.5	42.8	92°52.7	12.5	212°59.2	59.8					
12	224°58.3	18°16.5	S09°30.9	346°32.1	S20°43.2	107°55.1	N21°12.5	228°01.8	S03°59.8					
13	240°00.8	33°16.0	32.0	1°32.7	43.6	122°57.5	12.5	243°04.3	59.8					
14	255°03.3	48°15.5	33.2	16°33.3	44.0	137°59.9	12.5	258°06.9	59.8					
15	270°05.7	63°15.0	.. 34.3	31°33.9	.. 44.8	153°02.3	.. 12.5	273°09.4	.. 59.9					
16	285°08.2	78°14.5	35.5	46°34.5	44.4	168°04.7	12.5	288°12.0	59.9					
17	300°10.7	93°14.1	36.6	61°35.1	45.2	183°07.2	12.5	303°14.5	S03°59.9					
18	315°13.1	108°13.6	S09°37.8	76°35.7	S20°45.6	189°09.6	N21°12.5	318°17.1	S04°00.0					
19	330°15.6	123°13.1	38.9	91°36.3	46.0	213°12.0	12.5	333°19.6	00.0					
20	345°18.1	138°12.6	40.1	106°36.9	46.4	228°14.4	12.5	348°22.2	00.0					
21	0°20.5	153°12.1	.. 41.2	121°37.5	.. 46.7	243°16.8	.. 12.5	3°24.8	.. 00.1					
22	15°23.0	168°11.6	42.4	136°30.0	47.1	258°19.2	12.5	18°27.3	00.1					
23	30°25.5	183°11.1	43.5	151°38.6	47.5	273°21.6	12.5	33°29.9	00.1					
Mer.pass. 20:59			ν -0.5° d 1.2' m -3.91			ν 0.6° d 0.4' m 1.44			ν 2.4° d -0.0' m -2.35			ν 2.6° d 0.0' m 0.79		

Thu	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	45°27.9	198°10.6	S09°44.7	166°39.2	S20°47.9	288°24.0	N21°12.5	48°32.4
1	60°30.4	213°10.2	45.8	181°39.8	48.3	303°26.5	12.5	63°35.0
2	75°32.8	228°09.7	46.9	196°40.4	48.7	318°28.9	12.5	78°37.5
3	90°35.3	243°09.2	.. 48.1	211°41.0	.. 49.1	333°31.3	.. 12.5	93°40.1
4	105°37.8	258°08.7	49.2	226°41.6	49.5	348°33.7	12.5	108°42.6
5	120°40.2	273°08.2	50.4	241°42.2	49.9	3°36.1	12.5	123°45.2
6	135°42.7	288°07.7	S09°51.5	256°42.8	S20°50.3	18°38.5	N21°12.5	138°47.7
7	150°45.2	303°07.2	52.7	271°43.4	50.7	33°40.9	12.5	153°50.3
8	165°47.6	318°06.7	53.8	286°43.9	51.1	48°43.4	12.5	168°52.8
9	180°50.1	333°06.2	.. 55.0	301°44.5	.. 51.4	63°45.8	.. 12.5	183°55.4
10	195°52.6	348°05.7	56.1	316°45.1	51.8	78°48.2	12.5	198°57.9
11	210°55.0	3°05.2	57.2	331°45.7	52.2	93°50.6	12.5	214°00.5
12	225°57.5	18°04.7	S09°58.4	346°46.3	S20°52.6	108°53.0	N21°12.5	229°03.1
13	240°59.9	33°04.2	09°59.5	1°46.9	53.0	123°55.4	12.5	244°05.6
14	256°02.4	48°03.8	10°00.7	16°47.5	53.4	138°57.9	12.5	259°08.2
15	271°04.9	63°03.3	.. 01.8	31°48.1	.. 53.8	154°00.3	.. 12.5	274°10.7
16	286°07.3	78°02.8	02.9	46°48.7	54.2	169°02.7	12.5	289°13.3
17	301°09.8	93°02.3	04.1	61°49.2	54.6	184°05.1	12.5	304°15.8
18	316°12.3	108°01.8	S10°05.2	76°49.8	S20°54.9	199°07.5	N21°12.5	319°18.4
19	331°14.7	123°01.3	06.4	91°50.4	55.3	214°10.0	12.5	334°20.9
20	346°17.2	138°00.8	07.5	106°51.0	55.7	229°12.4	12.5	349°23.5
21	1°19.7	153°00.3	.. 08.6	121°51.6	.. 56.1	244°14.8	.. 12.5	4°26.0
22	16°22.1	167°59.8	09.8	136°52.2	56.5	259°17.2	12.5	19°28.6
23	31°24.6	182°59.3	10.9	151°52.8	56.9	274°19.6	12.5	34°31.1
Mer.pass. 20:55			ν -0.5° d 1.1' m -3.91			ν 0.6° d 0.4' m 1.43		

Fri	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	46°27.1	197°58.8	S10°12.1	166°53.3	S20°57.3	289°22.1	N21°12.5	49°33.7
1	61°29.5	212°58.3	13.2	181°53.9	57.6	304°24.5	12.5	64°36.2
2	76°32.0	227°57.8	14.3	196°54.5	58.0	319°26.9	12.4	79°38.8
3	91°34.4	242°57.3	.. 15.5	211°55.1	.. 58.4	334°29.3	.. 12.4	94°41.3
4	106°36.2	257°56.8	16.6	226°55.7	58.8	349°31.8	12.4	109°43.9
5	121°39.4	272°56.3	17.7	241°56.3	59.2	4°34.2	12.4	124°46.4
6	136°41.8	287°55.8	S10°18.9	256°56.8	S20°59.6	19°36.6	N21°12.4	139°49.0
7	151°44.3	302°55.3	20.0	271°57.4	20°59.6	34°39.0	12.4	154°51.5
8	166°46.8	317°54.8	21.1	286°58.0	21°00.3	49°41.5	.. 12.4	169°54.1
9	181°49.2	332°54.3	.. 22.4	301°58.6	.. 00.7	64°43.9	.. 12.4	184°56.6
10	196°51.7	347°53.8	23.4	316°59.2	01.1	79°46.3	12.4	199°59.2
11	211°54.2	2°53.3	24.5	331°59.8	01.5	94°48.7	12.4	215°01.7
12	226°56.6	17°52.8	S10°25.7	347°00.3	S21°01.9	109°51.2	N21°12.4	230°04.3
13	241°59.1	32°52.3	26.8	2°00.9	02.2	124°53.6	12.4	245°06.8
14	257°01.6	47°51.8	27.9	17°01.5	02.6	139°56.0	12.4	260°09.4
15	272°04.0	62°51.3	.. 29.1	32°02.1	.. 03.0	154°58.4	.. 12.4	275°11.9
16	287°06.5	77°50.8	30.2	47°02.7	03.4	170°00.9	12.4	290°14.5
17	302°08.9	92°50.3	31.3	62°03.2	03.8	185°03.3	12.4	305°17.0
18	317°11.4	107°49.8	S10°32.5	77°03.8	S21°04.1	200°05.7	N21°12.4	320°19.6
19	332°13.9	122°49.2	33.6	92°04.4	04.5	215°08.2	12.4	335°22.1
20	347°16.3	137°48.7	34.7	107°05.0	04.9	230°10.6	12.4	350°24.7
21	2°18.8	152°48.2	.. 35.8	122°05.6	.. 05.3	245°13.0	.. 12.4	5°27.2
22	17°21.3	167°47.7	37.0	137°06.1	05.7	260°15.4	12.4	20°29.7
23	32°23.7	182°47.2	38.1	152°06.7	06.0	275°17.9	12.4	35°32.3
Mer.pass. 20:51			ν -0.5° d 1.1' m -3.91			ν 0.6° d 0.4' m 1.43		

Stars		
SHA	Dec	
Alpheratz	357°33.8	29°14.2
Ankaa	353°06.1	-42°10.0
Schedar	349°29.8	56°41.0
Diphda	348°46.4	-17°50.6
Achernar	335°19.1	-57°06.3
Hamal	327°50.1	23°35.2
Polaris	313°12.1	89°22.4
Acamar	315°10.8	-40°12.0
Menkar	314°05.1	4°11.6
Mirfak	308°26.8	49°57.2
Aldebaran	290°38.5	16°33.7
Rigel	281°03.0	-8°10.2
Capella	280°20.5	46°01.4
Bellatrix	278°20.7	6°22.5
Elath	278°00.7	28°37.0
Alnilam	275°36.8	-1°11.0
Betelgeuse	270°51.1	7°24.8
Canopus	263°51.8	-52°42.2
Sirius	258°25.5	-16°44.9
Adhara	255°05.2	-29°00.2
Procyon	244°50.0	5°09.6
Pollux	243°16.4	27°57.8
Avior	234°14.4	-59°35.2
Suhail	222°45.9	-43°31.9
Miaplacidus	221°38.2	-69°49.0
Alphard	217°47.1	-8°46.1
Regulus	207°33.8	11°50.5
Dubhe	193°40.5	61°36.5
Denebola	182°24.5	14°25.7
Gienah	175°43.2	-17°41.0
Acrux	173°00.0	-63°14.3
Gacrux	171°51.4	-57°15.3
Alioth	166°12.9	55°49.0
Spica	158°21.9	-11°17.7
Alhaid	152°51.9	49°31.0
Hadar	148°35.7	60°29.7
Menkent	147°57.2	-36°29.7
Arcturus	145°47.6	19°02.9
Rigel Kent	139°40.1	-60°56.5
Kochab	137°21.0	74°02.9
Zuben al	136°55.6	-16°08.9
Alphecca	126°03.5	26°37.7
Antares	112°15.4	-26°29.3
Atria	107°09.5	-69°04.5
Sabik	102°02.3	-15°45.4
Shaula	96°09.8	-37°07.4
Rasalhague	95°58.2	12°32.6
Eltanin	90°42.3	51°29.3
Kaus Aust.	83°31.9	-34°22.4
Vega	80°33.0	38°48.6
Nunki	75°47.1	-26°15.9
Altair	61°59.4	8°56.3
Peacock	53°04.8	-56°39.3
Deneb	49°25.4	-45°22.6
Enif	33°38.1	9°59.8
Al Na'ir	27°31.9	-46°50.3
Fomalhaut	15°13.6	-29°29.2
Scheat	13°44.4	28°13.6
Markab	13°29.1	15°20.8

Nov 05 Wed			SHA	Mer.pass
Venus	153°53.5	10.47		
Mars	121°56.2	12.54		
Jupiter	242°57.4	04.49		
Saturn	3°02.3	20.46		
Nov 06 Thu			SHA	Mer.pass
Venus	152°42.7	10.48		
Mars	121°11.3	12.53		
Jupiter	242°56.1	04.46		
Saturn	3°04.5	20.42		
Nov 07 Fri			SHA	Mer.pass
Venus	151°31.7	10.48		
Mars	120°26.3	12.52		
Jupiter	242°55.0	04.42		
Saturn	3°06.6	20.38		
Horizontal parallax				
Venus:	0.1			
Mars:	0.1			